TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION
U.S. DEPARTMENT OF AGRICULTURE · · FOREST SERVICE

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European Larch Seed Sources Compete Successfully with Tamarack During 5-Year Test in Northeastern Wisconsin

A test of seed sources of various larches being made in northeastern Wisconsin reveals considerable difference among sources 5 years after planting. Of eight lots tested, three of European larch (Larix decidua) from the colder and more northern part of the range of that species in Europe and the one of tamarack (L. laricina) had the best survival, height growth, and reaction to the climate of the planting site. The plantings were made in 1950 in the Argonne Experimental Forest near Hiles, Wisconsin.

The tamarack seed was collected in the Upper Peninsula of Michigan. One of the three best lots of European larch came from Silesia, one from the German Alps collected at 2300 to 3300 feet elevation, and one from Czechoslovakia collected at altitudes of 1150 to 1350 feet. Detailed results are given on the back of the sheet.

Among the lots that did poorly in survival were one of European larch from the Italian Alps and one from the Austrian Alps. Both of these had sharp drops in survival between the third and fifth years.

One lot of Siberian larch (L. sibirica) from Finland had good survival, but its growth rate to date is the slowest of the species or sources that at present appear to have climatic adaptability.

Chief causes of injury or loss were late spring and early summer freezing of some larches of more southerly or mild-winter European origins.

The good growth and survival of the native tamarack were rather surprising because the planting site (former cover was northern hardwood, white pine, and hemlock) was an upland open sodded field of quack grass and timothy with a soil ranging from a fine sandy loam to silt loam. The usual Lake States habitat of tamarack is acid sphagnum swamps or low moist or wet areas.

Results are indicative of what might be expected in a full-scale replicated series of tests. Unfortunately, the lots were small, no replication was possible, and no differentiation was made by altitude within the various geographic locations. However, the records to date imply that European larch from the Austrian and Italian Alps cannot compete with our native tamarack. On the other hand, the European larch from the German Alps, Silesia, and Czechoslovakia seem to offer good prospects of bettering the record of tamarack.

(Over)

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MAINTAINED AT ST. PAUL 1, MINNESOTA, IN COOPERATION WITH THE UNIVERSITY OF MINNESOTA

A 5-year record on larch and tamarack of different seed sources planted in northeastern Wisconsin

Seed lot number	Species 1/	Seed source and elevation of collection	Trees planted	Years since planted	Survival	Average height	Live stem per 100 trees planted	Rank in fifth year
			Number	Number	Percent	Feet	Feet	
1533	European larch	Austrian Alps - 2000 to 3900 feet	35	1	94	0.98		
				2	94	1.28		
				3	83	1.87		
				5	31	4.60	142.6	8
1534	European larch	German Alps - 2300 to 3300 feet	57	1	98	.96		
				2	98	1.63		
				3	96	2.85		
				5	91	5.12	465.9	2
1539	European larch	Italian Alps - 3300 to 4300 feet	28	1	93	.66		
				2	89	1.06		
				3	89	1.66		
				5	64	2.76	176.6	7
1540	European larch	German Plain - 80 to 330 feet	82	1	93	.89		
				2	91	1.53		
				3	89	2.58		
				5	70	4.49	314.3	5
1541	European larch	Proskau, Silesia - elevation not known	57	1	95	1.23		
				2	89	1.63		
				3	88	3.19		
				5	81	6.05	490.1	1
1542	European larch	Czechoslovakia - 1150 to 1350 feet	59	1	95	1.37		
				2	92	1.88		
				3	86	3.17		
				5	71	6.47	459.4	3
1544	Siberian larch	Punkaharju, Finland - elevation not known	8	1	100	.71		
				2	100	1.14		
				3	100	1.90		
				5	88	3.29	289.5	6
	Tamarack	Ottawa National Forest, near Watersmeet, Michigan - 1600 feet	115	1	93	1.24		
				2	84	1.98		
				3	79	3.06		
				5	67	5.42	363.1	4

1/ European larch is L. decidua; Siberian larch, L. sibirica; and tamarack, L. laricin